

Amendment to the Claims:

Please amend the claims as follows.

Please cancel claims 28, 30 and 34, claims 40 to 43, and 56 to 59, without prejudice of disclaimer.

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity having comprising an amino acid sequence having at least 95% [[90%]] sequence identity to the amino acid sequence of SEQ ID NO:46, or encoded by a nucleic acid encoding a polypeptide having endoglucanase or cellulase activity and having at least 95% [[90%]] sequence identity to the polynucleotide sequence of SEQ ID NO:45.

Claim 2 (currently amended): An isolated, synthetic or recombinant polynucleotide comprising a sequence encoding the [[an]] endoglucanase or cellulase of claim 1, or comprising a nucleic acid sequence encoding a polypeptide having endoglucanase or cellulase activity and having at least 95% sequence identity to the polynucleotide sequence of SEQ ID NO:45.

Claim 3 (canceled)

Claim 4 (previously presented): The isolated, synthetic or recombinant polynucleotide of claim 2, wherein the polynucleotide is isolated from a prokaryote.

Claim 5 (currently amended): A vector comprising a nucleic acid having a sequence as set forth in claim 2 ~~or claim 32 or claim 37.~~

Claim 6 (previously presented): The vector of claim 5, wherein the vector comprises a plasmid.

Claim 7 (previously presented): The vector of claim 5, wherein the vector comprises virus-derived sequences.

Claim 8 (currently amended): An isolated host cell comprising the vector of claim 5, ~~or a nucleic acid having a sequence as set forth in claim 32.~~

Claim 9 (previously presented) The host cell of claim 8, wherein the cell is prokaryotic.

Claims 10 to 13 (canceled)

Claim 14 (currently amended): A method for producing an enzyme comprising (a) (i) growing a host cell of claim 8 or claim 53 under conditions which allow the expression of the enzyme-encoding nucleic acid and (ii) isolating the enzyme encoded by the nucleic acid, or (b) the method of (a), wherein the cell is a plant cell, a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claim 15 (currently amended): A method for degrading carboxymethylcellulose comprising contacting a carboxymethylcellulose with an effective amount of the [[a]] polypeptide of claim [[1]] 60.

Claim 16 (currently amended): A method for hydrolyzing a beta 1,4 glycosidic bond in a cellulose comprising contacting an effective amount of the [[a]] polypeptide of claim [[1]] 60 with the cellulose to hydrolyze the glycosidic bond.

Claim 17 (canceled)

Claim 18 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polynucleotide sequence identity is at least 97% [[95%]].

Claim 19 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 37, wherein the nucleic acid that hybridizes under stringent conditions to the polynucleotide sequence of SEQ ID NO:45 has at least 97% sequence identity to the polynucleotide of SEQ ID NO:45.

Claim 20 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 19, wherein the nucleic acid has the polynucleotide sequence of SEQ ID NO:45.

Claim 21 (canceled)

Claim 22 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polypeptide has at least 97% ~~[[95%]]~~ sequence identity to the amino acid sequence of SEQ ID NO:46.

Claim 23 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 22, wherein the polypeptide has the amino acid sequence of SEQ ID NO:46.

Claim 24 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polypeptide has endoglucanase activity.

Claim 25 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polypeptide has cellulase activity.

Claim 26 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 25, wherein the cellulase activity comprises a carboxymethyl cellulase activity.

Claim 27 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising ~~at least 30 amino acid residues of~~ (a) a polypeptide having at least 95% ~~[[90%]]~~ sequence identity to the amino acid sequence of SEQ ID NO:46, (b) a

polypeptide encoded by a nucleic acid encoding a polypeptide having endoglucanase or cellulase activity and having at least 95% sequence identity to the polynucleotide sequence of SEQ ID NO:45, or (c) enzymatically active fragments of (a) or (b).

Claim 28 (canceled)

Claim 29 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising ~~at least 30 amino acid residues of~~ a polypeptide having the amino acid sequence of SEQ ID NO:46, or enzymatically active fragments thereof.

Claim 30 (canceled)

Claim 31 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising the amino acid sequence of SEQ ID NO:46 and having at least one conservative amino acid substitution, wherein the conservative amino acid substitution comprises: a replacement, one for another, among the aliphatic amino acids Ala, Val, Leu and Ile; or an interchange of the hydroxyl residues Ser and Thr; or an exchange of the acidic residues Asp and Glu; or a substitution between the amide residues Asn and Gln; or an exchange of the basic residues Lys and Arg; or a replacement among the aromatic residues Phe, Tyr,

wherein the polypeptide has an amino acid sequence having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:46, or the polypeptide is encoded by a nucleic acid having at least 90% sequence identity to the polynucleotide sequence of SEQ ID NO:45.

Claim 32 (currently amended): An isolated, synthetic or recombinant nucleic acid encoding a polypeptide having endoglucanase or cellulase activity and comprising a nucleic acid sequence (a) having at least 90% sequence identity to the polynucleotide sequence of SEQ ID NO:45, (b) encoding a polypeptide having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:46, or (c) enzymatically active fragments thereof.

Claims 33 and 34 (canceled)

Claim 35 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 37 ~~[[34]]~~, wherein the nucleic acid sequence hybridizes under stringent conditions to the polynucleotide sequence of SEQ ID NO:45 and has at least 97% sequence identity to the polynucleotide sequence of SEQ ID NO:45.

Claim 36 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 35, wherein the nucleic acid sequence has the polynucleotide sequence of SEQ ID NO:45, or encodes the amino acid ~~amino acid~~ sequence of SEQ ID NO:46.

Claim 37 (currently amended): An isolated, synthetic or recombinant nucleic acid encoding a polypeptide having endoglucanase or cellulase activity, wherein the nucleic acid hybridizes under stringent conditions to the polynucleotide sequence of SEQ ID NO:45, and the stringent conditions comprise a wash step comprising a wash for 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by 30 minute wash in fresh solution at T_m-10°C.

Claim 38 (previously presented): The host cell of claim 8, wherein the cell is a plant cell.

Claim 39 (previously presented): The host cell of claim 8, wherein the cell is a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claims 40 to 43 (canceled)

Claim 44 (currently amended): A method for converting plant biomass into fuels ~~[[and]]~~ or chemicals comprising contacting a plant biomass comprising ~~[[carboxymethyl]]~~ cellulose with an effective amount of a polypeptide of claim ~~[[1]]~~ 60, thereby hydrolyzing the cellulose for enzymatically converting the plant biomass into a fuel or a chemical.

Claim 45 (previously presented): The method of claim 15 or 16, wherein the polypeptide is employed in the detergent and textile industry.

Claim 46 (previously presented): The method of claim 15 or 16, wherein the method produces an animal feed.

Claim 47 (previously presented): The method of claim 15 or 16, wherein the polypeptide is employed in waste treatment for degrading carboxymethylcellulose or for hydrolyzing a beta 1,4 glycosidic bond in a cellulose.

Claim 48 (previously presented): The method of claim 15 or 16, wherein the polypeptide is employed in a fruit juice industry or a brewing industry for the clarification or extraction of juices or brews.

Claim 49 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the composition of the polypeptide further comprises a textile.

Claim 50 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the composition of the polypeptide further comprises a feed.

Claim 51 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the composition of the polypeptide further comprises a detergent.

Claim 52 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the composition of the polypeptide further comprises a juice or a brew.

Claim 53 (currently amended): An isolated host cell comprising (a) a heterologous nucleic acid having a sequence as set forth in claim 37, or (b) the host cell of (a), wherein the cell is a plant cell, a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claim 54 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 37, wherein the nucleic acid that hybridizes under stringent conditions to the polynucleotide sequence SEQ ID NO:45 has at least 95% sequence identity to the polynucleotide of SEQ ID NO:45.

Claim 55 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the cellulase activity comprises a carboxymethylcellulase activity.

Claims 56 to 59 (canceled)

Claim 60 (new): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising an amino acid sequence having at least 90% sequence identity to the amino acid sequence of SEQ ID NO:46, or encoded by a nucleic acid having at least 90% sequence identity to the polynucleotide sequence of SEQ ID NO:45, or enzymatically active fragments thereof.

Claim 61 (new): An isolated, synthetic or recombinant polynucleotide sequence encoding an endoglucanase or cellulase of claim 60.

Claim 62 (new): A method for producing an enzyme comprising growing a host cell of claim 53 under conditions which allow the expression of the nucleic acid and isolating the enzyme encoded by the nucleic acid.

Claim 63 (new): A method for degrading carboxymethylcellulose comprising contacting a carboxymethylcellulose with an effective amount of a polypeptide encoded by the nucleic acid of claim 37.

Claim 64 (new): A method for hydrolyzing a beta 1,4 glycosidic bond in a cellulose comprising contacting an effective amount of a polypeptide encoded by the nucleic acid of claim 37, with the cellulose to hydrolyze the glycosidic bond.

Claim 65 (new): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the composition of the polypeptide further comprises a textile.

Claim 66 (new): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the composition of the polypeptide further comprises a feed.

Claim 67 (new): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the composition of the polypeptide further comprises a detergent.

Claim 68 (new): A vector comprising a nucleic acid having the nucleic acid sequence of claim 32.

Claim 69 (new): A vector comprising a nucleic acid having the nucleic acid sequence of claim 37.

Claim 70 (new): An isolated host cell comprising (a) the nucleic acid of claim 32, or (b) the host cell of (a), wherein the cell is a plant cell, a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claim 71 (new): An isolated, synthetic or recombinant nucleic acid encoding the polypeptide of claim 29.

Claim 72 (new): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the composition of the polypeptide further comprises a biomass.

Claim 73 (new): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the composition of the polypeptide further comprises a juice or a brew.

Claim 74 (new): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the composition of the polypeptide further comprises a biomass.